

MICHIGAN DEPARTMENT OF NATURAL RESOURCES  
FISHERIES DIVISION

**STATUS OF THE FISHERIES  
IN MICHIGAN WATERS OF  
LAKE ERIE AND LAKE ST. CLAIR  
2001**



*Muskellunge Captured in a Trawl on Lake St. Clair*



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## Highlights for 2001

*The purpose of this report is to provide an update on the status of the fisheries in the Great Lakes and connecting waters of southeast Michigan. Sources of information used in compiling this report include creel surveys, charter boat reports, an angler diary program, the Master Angler program, and commercial fishery records, as well as fisheries research studies. Some of the 2001 highlights described in detail include:*

- *Lake Erie yellow perch abundance has increased in recent years, whereas walleye abundance has declined. Walleye experienced below average reproduction in 1995 and 1998, but very good reproduction in 1999.*
- *Non-charter catch rates for Lake Erie walleye decreased in 2001, while yellow perch catch rates improved. Angler effort declined, but remained consistent with the levels observed since 1995.*
- *Charter boat catch rates for Lake Erie walleye were about three times higher than those estimated for non-charter anglers, while yellow perch catch rates were about the same.*
- *Entries in the Master Angler Program clearly indicate that Lake St. Clair is the premier Michigan water for trophy smallmouth bass and muskellunge.*
- *The exotic round goby has become a common food item for smallmouth bass and walleye in Lake St. Clair. Ruffe have not yet been collected from Lake St. Clair or Lake Erie.*
- *Long-term walleye tagging studies on Lake Erie illustrate the important contribution of Lake Erie walleye to the Great Lakes sport fishery of Southeast Michigan, from Port Huron to Toledo.*
- *Since 1996, a total of 1,066 lake sturgeon have been tagged and released in Lake St. Clair and the St. Clair River. To date, 38 tag recoveries have been reported.*

## Fishery Forecast for 2002

Annual variation in the reproductive success of walleye and yellow perch can result in substantial year to year changes in the abundance of these species. Harvestable-size yellow perch abundance will be about the same in Lake Erie and Lake St. Clair in 2002, with continued strong contributions from the 1998 year class. Legal-size walleye numbers will remain about the same in 2002, but average size should increase as the strong 1999 year class continues to dominate the catch. Great lakes muskellunge and smallmouth bass numbers tend to remain more stable from year to year and both species should continue to provide excellent fishing opportunities in 2002. However, weather conditions can affect sport fishing success as much as fish abundance. Therefore it is difficult to predict fishing success. Water levels are expected to remain relatively low again this year, which may restrict angler access to some traditional fishing areas in the connecting waters. The success of marsh spawning species such as northern pike and largemouth bass could be negatively influenced.

## Sport Fishery Summary

An on-site creel survey conducted by the Michigan Department of Natural Resources (MDNR) produced a total harvest estimate of 490,807 fish (Table 1) for Michigan's 2001 Lake Erie sport fishery (non-charter). Estimated angler effort in 2001 declined slightly, but remained consistent with levels observed since 1993 (Figure 1). The walleye catch rate also declined in 2001, while the yellow perch catch rate increased (Figure 2). Trends in angler effort and catch rates for walleye and yellow perch since the mid-1980's suggest that the level of angler effort on Lake Erie is affected by many factors in addition to catch rates. Other factors, including weather, abundance of prey fish species, fishing success on other Great Lakes waters, and regional economic conditions have likely contributed to the comparatively low level of fishing effort since 1991.

Biological data were collected from walleye and yellow perch during the 2001 on-site creel survey. Age 2, 3, and 4 fish (1999, 1998 and 1997 year classes) dominated the walleye harvest, comprising 83% of the catch (Figure 3). Harvested age 2, 3, and 4 walleye averaged 356 mm (14.0 in.), 427 mm (16.8 in.), and 470 mm (18.5 in.) in total length. The overall average

length of walleye harvested in the Michigan sport fishery in 2001 was 419 mm (16.5 in.).

Yellow perch harvest was dominated by age 3 fish (1998 year-class), which accounted for 44% of the total harvest (Figure 3). In combination, age 2 (26%), 4 (17%), and 5 (11%) contributed 54% of the total harvest. Average lengths of harvested age 2, 3, and 4 yellow perch were 188 mm (7.4 in.), 206 mm (8.4 in.), and 220 mm (8.7 in.), respectively. The observed mean length at age for yellow perch taken in the Michigan sport fishery in 2001 remained below the levels of the mid-1990's, but similar to those of the early 1990's (Figure 4). We suspect that increased abundance in recent years has resulted in slower growth for perch in western Lake Erie.

Since 1989, Michigan charter boat operators have been required to report their charter fishing catch and effort to the MDNR. In 2001, Michigan charter boat anglers harvested 73,767 fish from Lake Erie (Table 2). Walleye (59%) and yellow perch (39%) were the major species harvested, accounting for 98% of the catch. Charter boat walleye catch rates were more than three times higher than those estimated for non-charter anglers in 2001, while yellow perch charter catch rates were about equal with the yellow perch catch rate for non-charter boat anglers.

On Lake St. Clair and the St. Clair River, charter boat anglers harvested 12,507 fish (Table 3). Yellow perch (51%), "other" species (28%), and walleye (20%) made up the bulk of the catch, accounting for about 99% of the total harvest. The "other" species category is thought to consist mainly of smallmouth bass and muskellunge.

During the period since 1990, walleye catch rates have remained relatively high for Lake Erie charter boat anglers (Figure 5), but declined markedly after 1990 for Lake St. Clair charters (Figure 6). In 2001, the charter catch rate for Lake Erie walleye remained consistent with levels typical of the 1990's. In 2001, the Lake St. Clair walleye catch rate increased to the highest level recorded since 1991. Non-charter anglers reported walleye fishing in the Michigan waters of Lake St. Clair was consistently good throughout most of the summer. The factors behind improved walleye fishing in Lake St. Clair in 2001 are not clear, but could include increased movement of walleye into the lake

from Lake Erie, where the 1999 walleye year class appears quite strong. The number of reported charter excursions on Lake St. Clair in 2001 increased, possibly a reflection of the improved walleye fishing success on the lake (Figure 7).

Charter boat catch rates for yellow perch have remained fairly steady for Lake Erie since 1996 (Figure 5). Yellow perch catch rates for charter boats on Lake St. Clair have been more variable (Figure 6), but continued a trend of improvement in 2001. The Lake St. Clair charter boat fishery for yellow perch occurs mainly in September and October. Varying weather patterns during those months seem to play a major role in annual variations in the catch rate. Due to unseasonably warm weather, the fishery was very late to develop in 1998, 1999, and 2000, with the best fishing occurring in late October and November, after most charter businesses had closed for the season.

Despite the lack of creel survey data for Lake St. Clair, it is apparent that the muskellunge fishery exceeds that of any other period in modern history. Angler reports indicate spectacular catch rates. Muskellunge catch rates derived from the Angler Diary Program on Lake St. Clair verify these reports (Figure 8). We believe the quality of the Lake St. Clair muskellunge fishery is also reflected in the MDNR's Master Angler Program. The total number of muskellunge from Lake St. Clair entered for Master Angler Awards in 2001 exceeded 50 fish for the fifth consecutive year (Figure 9). The number of fish over 30 pounds remained above the numbers recorded prior to 1991. We believe that factors contributing to the dramatic improvement in this fishery include: 1) a positive response to increased minimum size limits on both sides of the lake since the mid-1980's; 2) physical and biological changes in the lake such as clearer water and increased aquatic plant growth resulting in improved habitat for Great Lakes muskellunge; and, 3) increased voluntary catch and release fishing for muskies in Lake St. Clair by both sport and charter anglers.

The Master Angler program also indicates that Lake St. Clair is the premier waterbody in the state for trophy smallmouth bass. Lake St. Clair accounted for 20% of all smallmouth bass entries in 2001 (catch/keep and catch/release programs combined). This strong representation

of Lake St. Clair smallmouth bass in the statewide Master Angler Program is likely a reflection of the abundance of trophy-size smallmouth bass in the lake and a relatively high degree of angler effort targeting the species.

## Commercial Fishery Summary

In 2001, only one Michigan commercial fishing license was active on Lake Erie. This state licensed commercial seine operation in the shallow embayments along Michigan's Lake Erie shoreline harvested 9 species of fish for a total of 239,341 pounds (Table 4). In combination, common carp (78%), buffalo (10%) and channel catfish (7%) accounted for 95% of the total harvest by weight. The total value of the 2001 Lake Erie commercial harvest from Michigan waters was estimated at \$46,048.

## Summary of Netting Surveys

Since 1978, the MDNR has fished variable mesh multi-filament gill nets at two locations in western Lake Erie each fall, as part of the interagency yearling walleye assessment program. During 2001, a total of 486 walleye were caught in four net lifts. The total walleye catch-per-effort for the index sites (121.8) remained almost unchanged in 2001 and just slightly below the mean annual catch per unit effort (cpue) of 127.1 for the time series (Table 5). The age 1 catch rate of 6.5 suggests that the 2000 year class is likely low in abundance, similar to the weak 1995 and 1992 year classes. No trend in walleye growth is obvious from the mean length at age data for walleye taken in the fall index gill net survey.

The fish community of Lake St. Clair was surveyed with bottom trawls in 2001 by the MDNR. A total of 176 trawl tows were conducted at locations randomly selected across the lake. The diversity of the Lake St. Clair fish community was obvious during the sampling, with 44 fish species represented among the total of 58,583 fish collected. The most abundant species were spottail shiner, trout-perch, yellow perch, mimic shiner, alewife, round goby, and white perch (Figure 10).

Abundant forage species provide a healthy forage base for the lake's predator populations,

which include smallmouth bass, walleye, northern pike, and muskellunge. For example, Lake St. Clair smallmouth bass stomachs examined in 2001 contained mayflies, crayfish, and at least eight different species of forage fish with the round goby accounting for the largest portion of the diet (Figure 11). Walleye stomachs revealed a less diverse diet, but also included the exotic round goby. While the impact of the round goby on the native fish community of the lake is unclear at this time, the densities of johnny darter and logperch have greatly declined since 1996 (Figure 12). This decline could be a result of competitive interactions with the exotic round goby. Tubenose gobies are present throughout the lake, but densities remain much lower than those attained by round gobies. Tubenose gobies also tend to occur in more heavily vegetated nearshore areas. No ruffe have been collected from Lake St. Clair.

A total of 185 lake sturgeon were collected during assessment surveys on the St. Clair River and Lake St. Clair in 2001. Sturgeon captured averaged 49.0 inches in total length, with a range from 19 inches to 67 inches. Ages were estimated for 178 sturgeon based on pectoral fin ray sections. Thirty-four year-classes were represented with ages ranging from 2 to 41 years. Combined age samples from 1997-2001 indicate that survival of lake sturgeon spawned in the 1970's and 1980's has been consistent and higher than that of the 1960's (Figure 13). This may be a result of improved water quality after the Clean Water Act of 1972. Restrictive lake sturgeon sport fishing regulations implemented in 1983 by Michigan could also be a factor in the increased survival. A total of 177 lake sturgeon were tagged on the dorsal fin with numbered metal tags and released.

## Fish Tagging Studies

In 2001, a total of 4,210 walleye were tagged with non-reward tags by Ontario, Ohio, Pennsylvania, New York, and Michigan at nine Lake Erie sites. A total of 89 non-reward tags were recovered by fishermen for a single season reporting rate of 2.1%. The 2001 site-specific reporting rate varied from a high of 3.8% at the Maumee River site in Ohio, to a low of 0.8% for the Van Buren Bay site in New York. The interagency tagging study continues to provide evidence of substantial movement of walleye



from spawning locations in Lake Erie through the St. Clair connecting waters (Figure 14).

A total of 1,066 lake sturgeon have been tagged and released on the St. Clair River and Lake St. Clair since 1996. To date, thirty-eight tagged lake sturgeon have been recaptured. Fourteen have been recovered with survey setlines in the North Channel. Nine recoveries were reported by sport anglers, including a reported recovery from Lake Erie near Huron, Ohio. Nine recoveries have been reported from the Ontario commercial trap net fishery in southern Lake Huron, approximately 70 kilometers from the tag site. All other recaptures have occurred within 10 km of the tag sites. Although trawling has accounted for the capture of 60% of the sturgeon tagged and released during this study, only five recoveries (13%), have been from a fish originally caught in a trawl on Lake St. Clair. This may be an indication that fish residing year round in the St. Clair River, or moving north into southern Lake Huron, experience a much higher level of fishing exploitation.

## Water Levels

After nearly 30 years of above average water levels, anglers and boaters have experienced below average water levels in the connecting waters and Lake Erie during the last three years.

Lower water levels may prove an impediment to sport anglers by restricting boat launching and boat travel to some traditional fishing areas. The effect of lower water levels on fish populations is uncertain. Short-term impacts may be negative.

For example, northern pike spawning may be negatively impacted because coastal wetlands are dewatered. Bass spawning beds could also be more visible and more vulnerable to bass anglers. However, low water levels can result in recovery of lost coastal wetland areas. In Lake St. Clair, recovery of beds of emergent rushes is already apparent. Unfortunately, invasive *Phragmites* has also expanded its distribution in the St. Clair Flats area during this period of low water. When water levels return to average or higher, increased coastal wetland habitat would positively impact many of the fish species in the connecting waters.

## Sport Fishing Regulations

Walleye in Lake Erie are managed cooperatively with other jurisdictions under a harvest quota system. Reduced spawning success for walleye in Lake Erie has resulted in lower adult walleye abundance in recent years. Consequently, walleye harvest quotas will be lower for several years. Therefore, the daily walleye bag limit in Michigan's waters of Lake Erie will remain a 5 fish daily limit with 1 additional fish, for a total daily limit of 6 fish per day for 2002. This results in consistent Michigan walleye size and daily bag limits for the connecting waters and Lake Erie. If the Michigan walleye sport harvest exceeds the harvest quota in the future, the daily bag limit will be adjusted.

Walleye size limits on Lake St. Clair and the St. Clair River will remain the same in 2002. A special walleye size limit (only 1 fish over 46 cm or 18.1 inch total length; 6 fish daily limit) for the Ontario portion of Lake St. Clair and the St. Clair River remains in effect. Michigan will continue to enforce a 13 inch minimum size limit for these waters.

Lake sturgeon fishing regulations were revised by the MDNR in 1999. Effective, April 1, 1999, harvesting of lake sturgeon is prohibited from Michigan's Great Lakes and connecting waters, except for the St. Clair River and Lake St. Clair. On the St. Clair River and Lake St. Clair, regulations include a "slot" size limit, with a minimum length limit of 1,067 mm (42 inches) and a maximum length limit of 1,270 mm (50 inches), a season bag limit of 1 fish, an open season from July 16 to September 30, and mandatory registration of harvested sturgeon at designated check stations. This "slot" limit will allow a limited harvest to continue, while protecting sexually mature female fish, and potentially allowing older fish to increase in abundance. No lake sturgeon were registered at the check stations during the 1999 or 2000 harvest seasons. However, three fish were registered during the 2001 harvest season. All three were reportedly caught in the North Channel of the St. Clair River.

The open season for smallmouth and largemouth bass fishing in the Michigan portion of the connecting waters (St. Clair River, Lake St. Clair, and Detroit River) is from the third Saturday in June to December 31. In recent

years, “preseason” fishing for bass has become increasingly popular on these waters. Many anglers are apparently unaware that it is a violation of the Natural Resources and Environmental Protection Act to fish for smallmouth bass during the closed season (Public Act 451 of 1994, Part 487, Sec. 324.48716), even if the angler intends to release any bass caught. The objective of the season closure is to protect bass during the pre-spawning and spawning periods when they are particularly vulnerable to overexploitation. Male bass guard the nest and protect the eggs and fry from predation by other fish. Removing guarding males for just a minute or two has been documented to increase egg and fry predation. In 2002, low water levels may make spawning bass more visible and thus more vulnerable in Lake St. Clair. We urge bass anglers to show restraint and comply with the existing fishing regulations on the connecting waters.

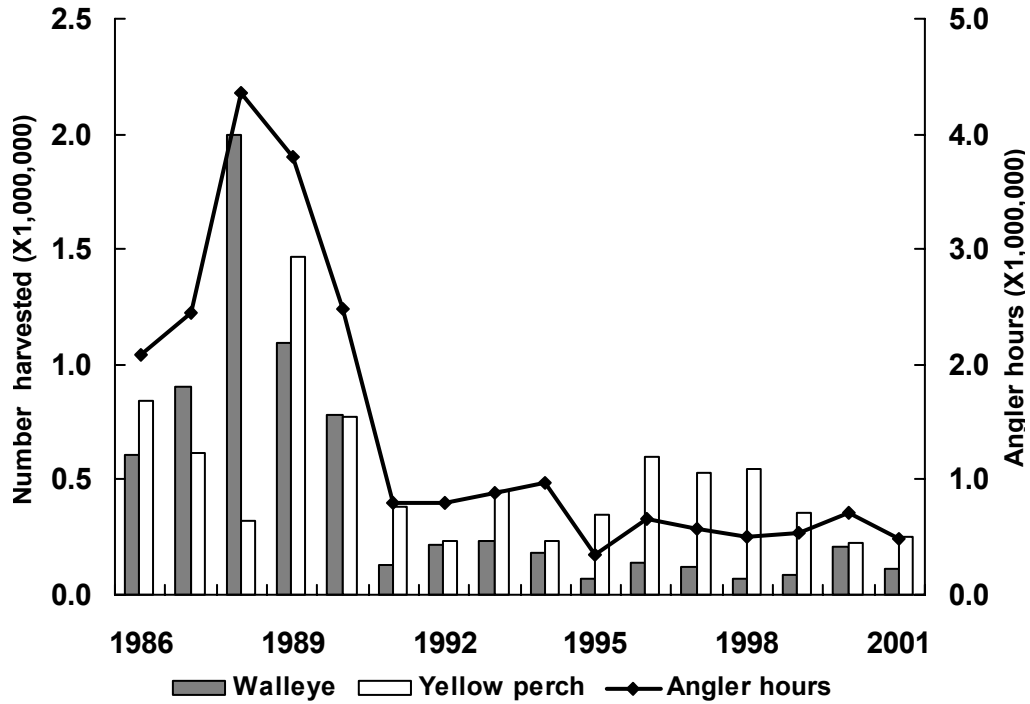


Figure 1.—Estimated harvest and effort for Michigan's Lake Erie sport fishery, 1986-2001.

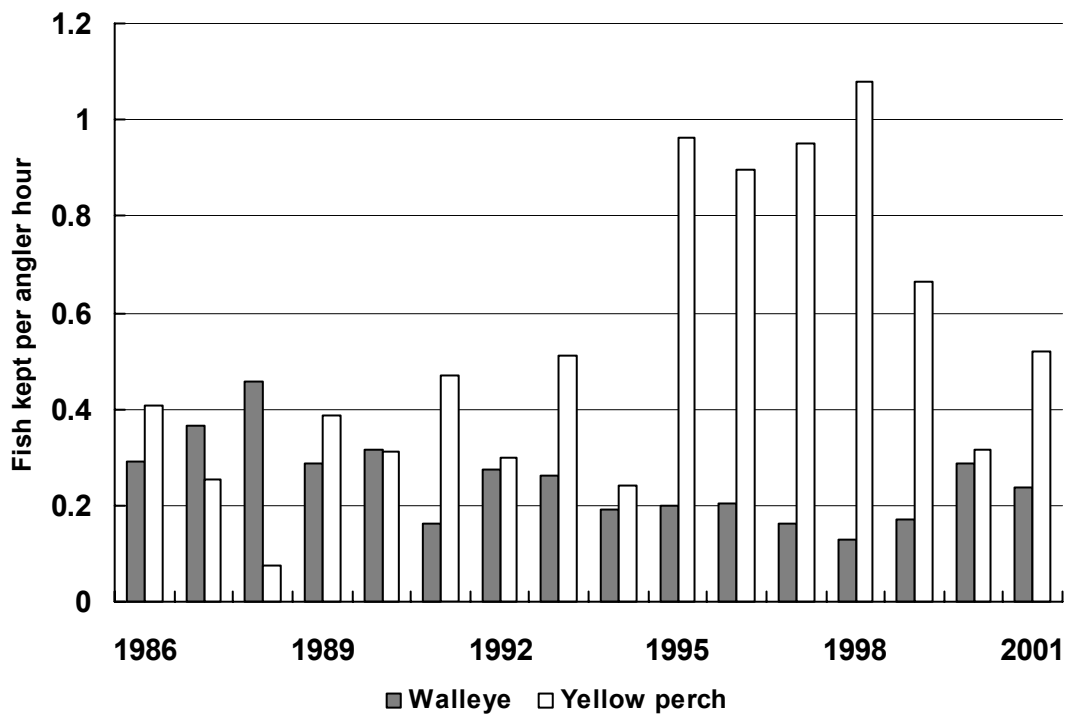


Figure 2.—Walleye and yellow perch catch rates for Michigan's Lake Erie sport fishery, 1986-2001.

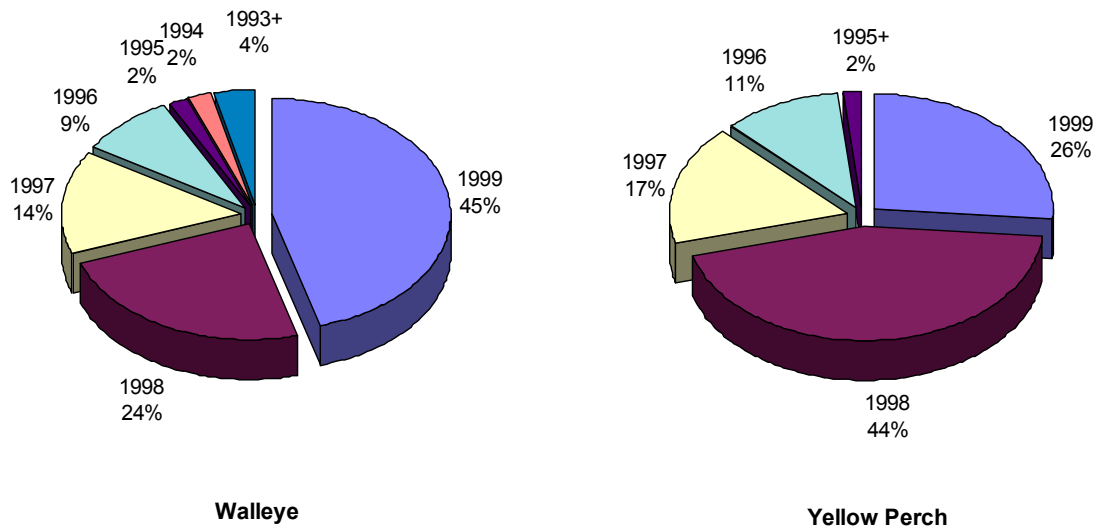


Figure 3.—Year-class contribution to Michigan sport harvest for walleye and yellow perch from Lake Erie in 2001.

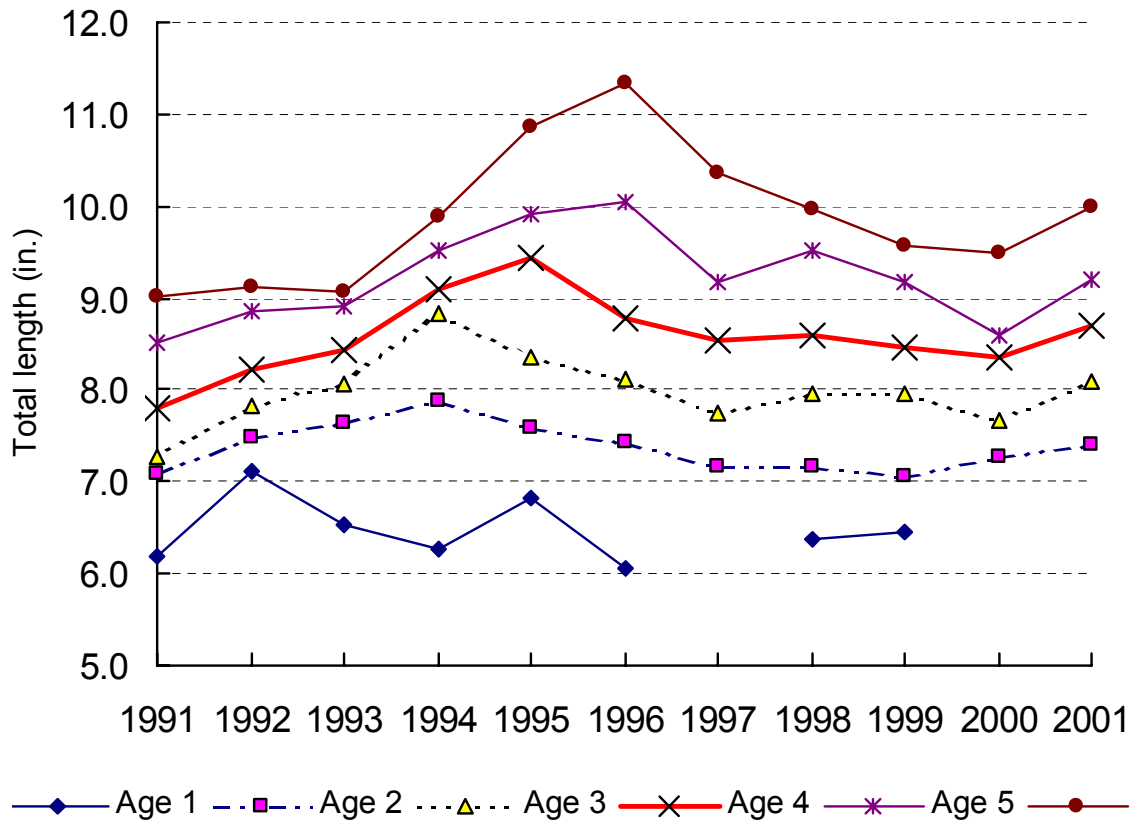


Figure 4.—Mean length at age for sport caught yellow perch from Michigan's waters of Lake Erie, 1991-2001.



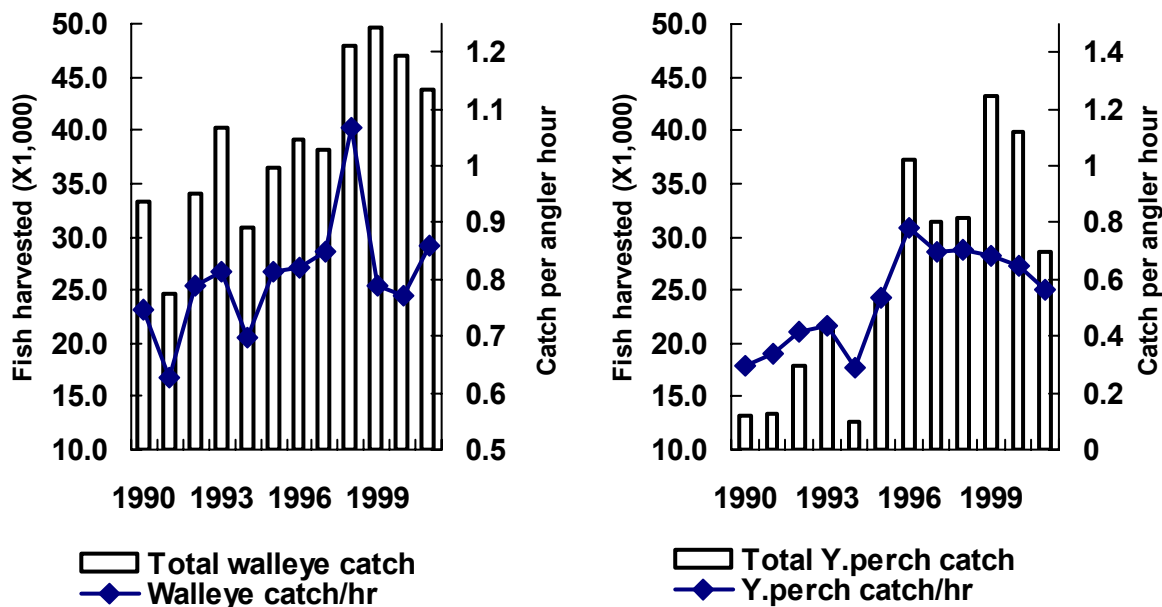


Figure 5.—Michigan charter boat harvest and catch rates for Lake Erie, 1990-2001.

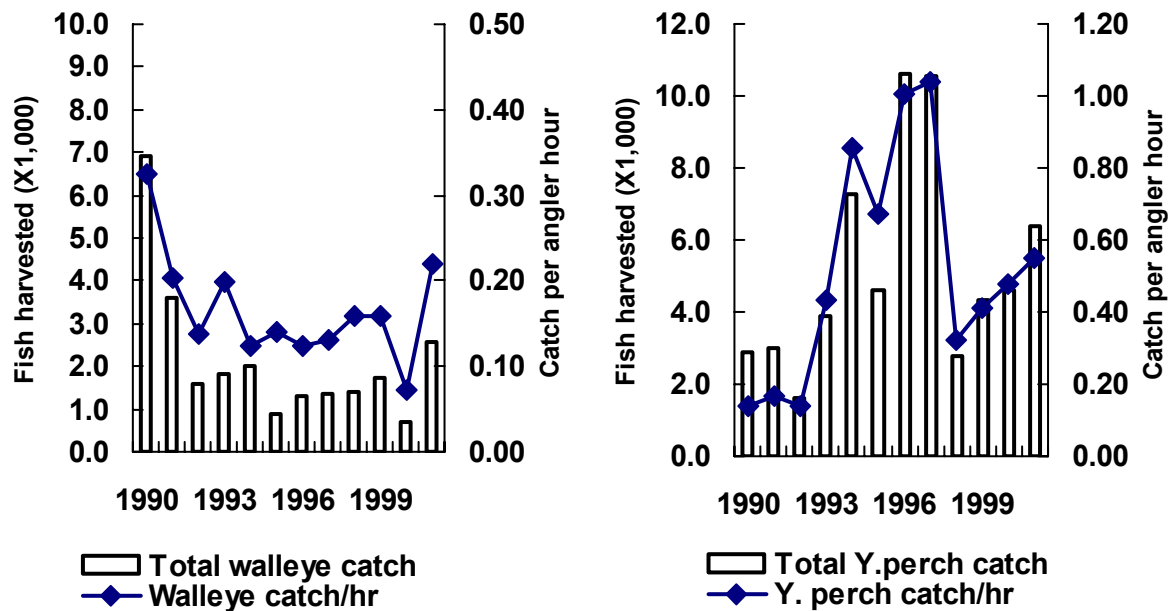


Figure 6.—Michigan charter boat harvest and catch rates for Lake St. Clair, 1990-2001.

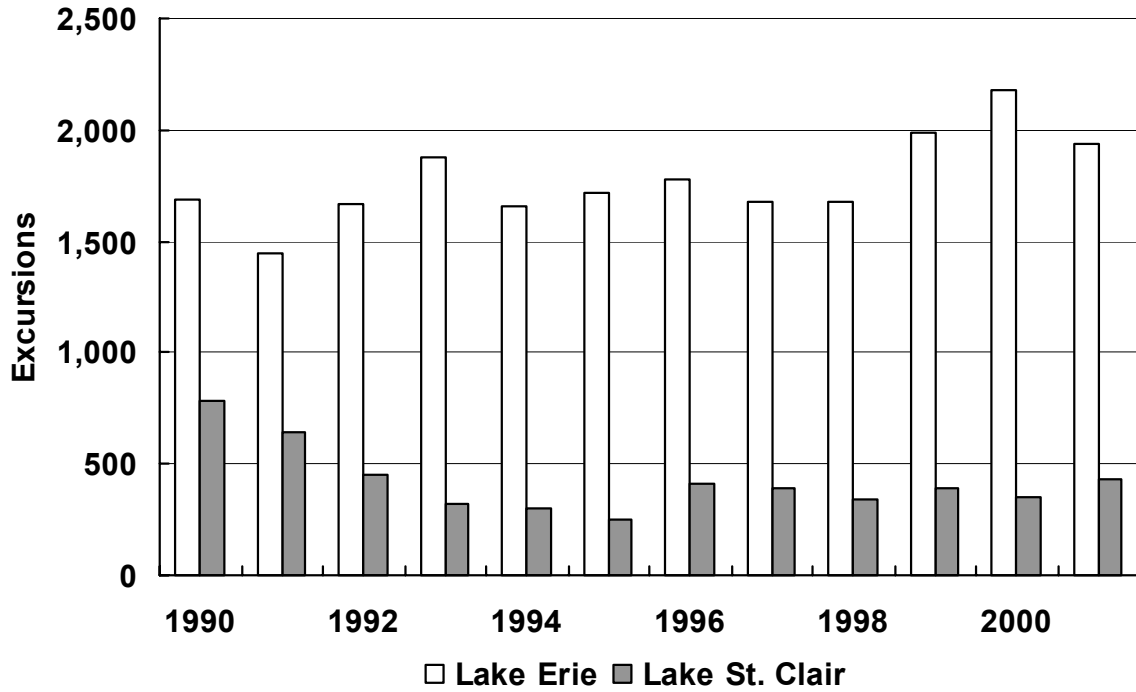


Figure 7.—Reported charter boat excursions on Lake Erie and Lake St. Clair, 1990-2001.

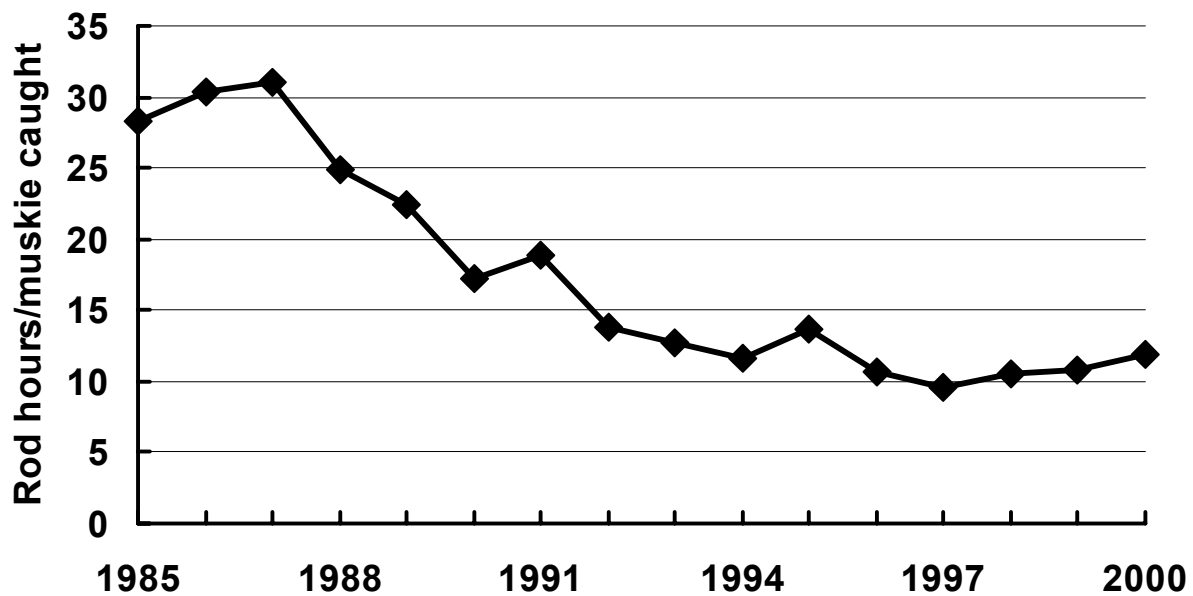


Figure 8.—Lake St. Clair great lakes muskellunge catch rate from Angler Diary Program, 1985-2000.

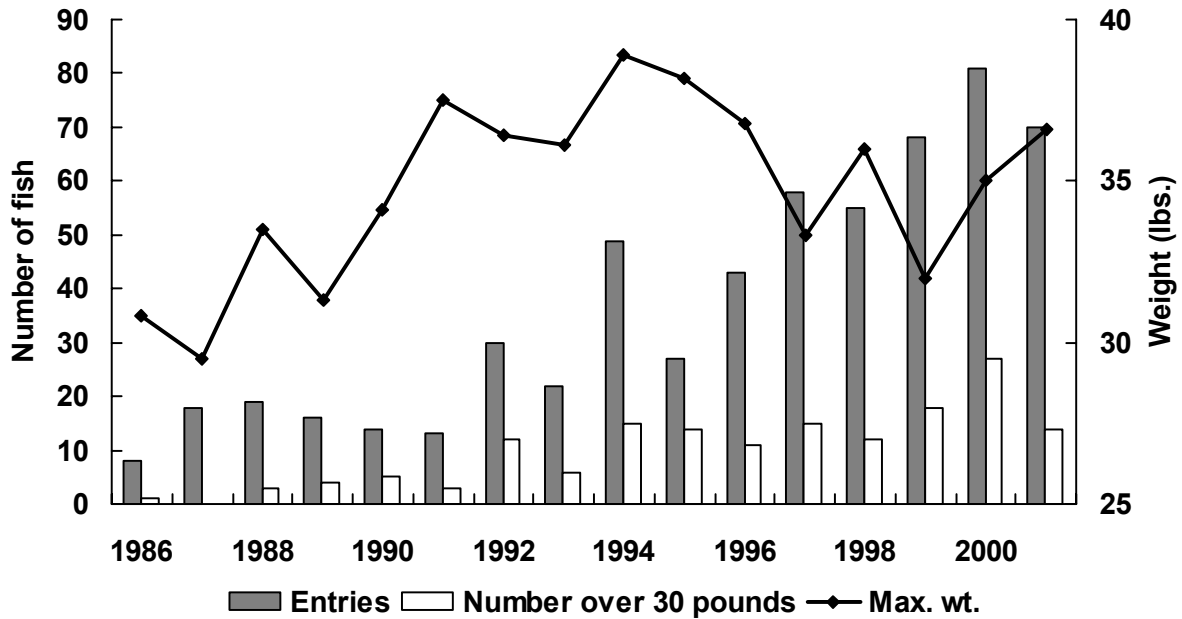


Figure 9.—Lake St. Clair great lakes muskellunge entered in the Michigan DNR Master Angler Program, 1986-2000. Values for 1992-2001 represent combined regular and catch-and-release Master Angler categories.

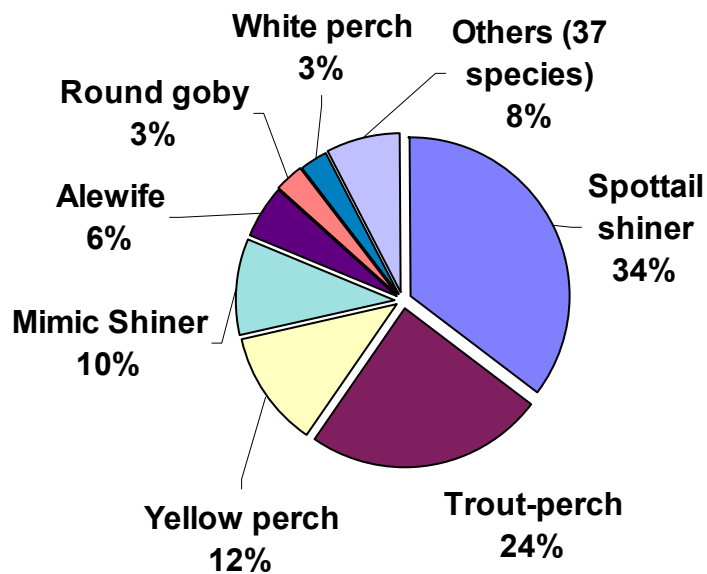


Figure 10.—Catch composition for all trawls on Lake St. Clair in 2001 (n=176).

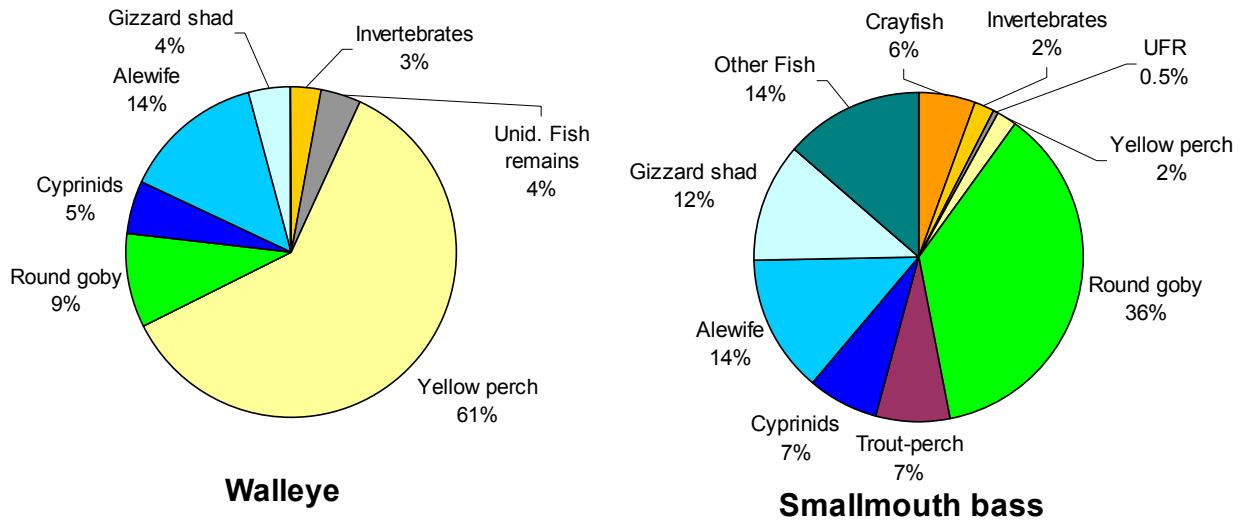


Figure 11.—Contribution to diet (expressed as percent of total wet weight) by various taxa for walleye (n=33) and smallmouth bass (n=59) collected from Lake St. Clair in 2001.

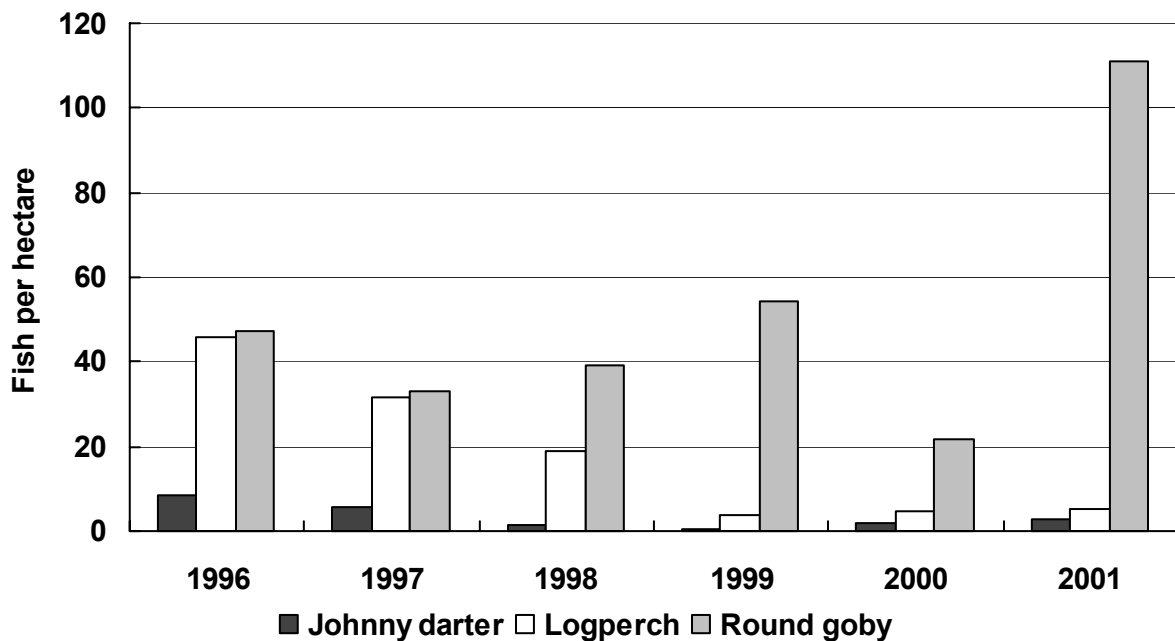


Figure 12.—Density of johnny darter, logperch, and round goby in Lake St. Clair, based on annual mean catch rates for 10m headrope bottom trawls.

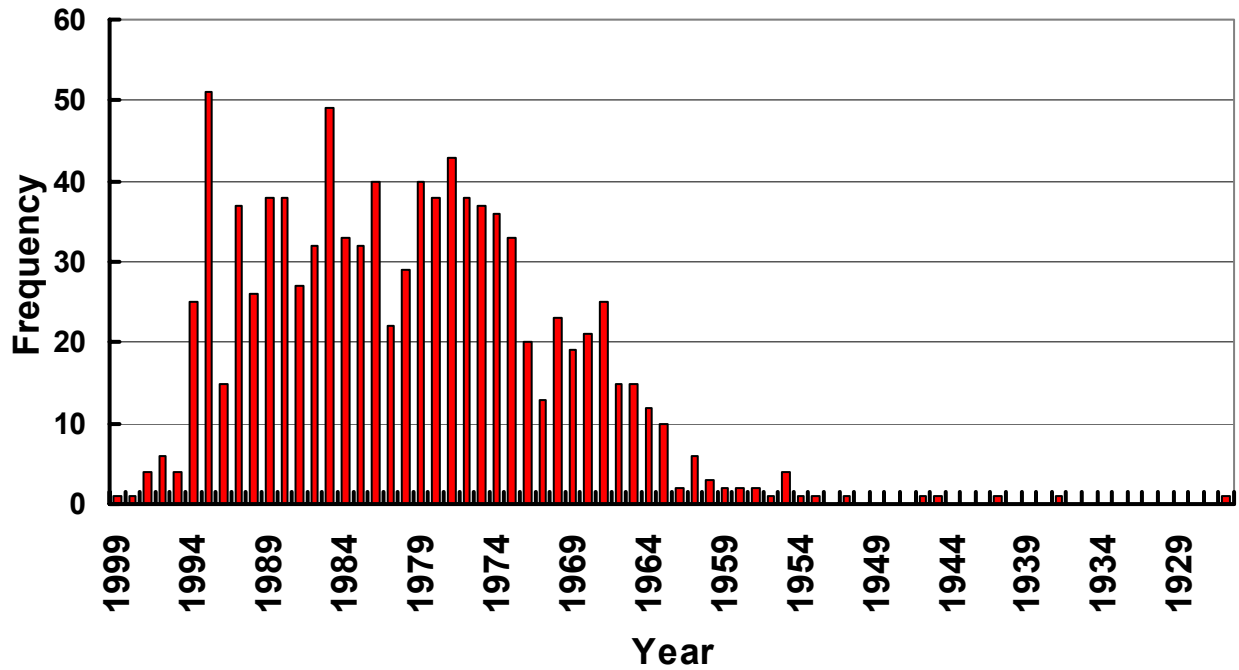


Figure 13.—Year of hatching for lake sturgeon sampled from Lake St. Clair and St. Clair River from 1997 to 2001 by Mt. Clemens Research Station (n=978).



Figure 14.—Geographical distribution of walleye tag recoveries in 2001 from fish tagged during all years at Monroe (47 recoveries in 2001) and other Lake Erie tag sites (207 recoveries in 2001).



Table 1.—Estimated sport harvest, catch rate, and effort for Michigan's 2001 Lake Erie non-charter boat fishery. Two standard errors in parentheses.

Species	Harvest per hour	Month							Season
		Apr	May	Jun	Jul	Aug	Sep	Oct	
Yellow Perch	0.5181 (0.5138)	111 (278)	3,440 (8,396)	25,808 (79,599)	6,063 (19,578)	86,675 (118,606)	122,437 (199,638)	9,757 (33,596)	254,291 (248,679)
Walleye	0.2349 (0.1265)	2,998 (3,292)	14,321 (16,889)	27,447 (29,143)	65,646 (47,729)	3,725 (6,771)	1,017 (5,054)	135 (1,089)	115,289 (59,127)
White bass	0.0078 (0.0166)	208 (582)	1,074 (3,944)	2,209 (6,943)	68 (377)	221 (1,251)	39 (282)	0 (0)	3,819 (8,117)
Channel catfish	0.0071 (0.0179)	139 (583)	447 (2,107)	408 (2,583)	427 (1,691)	1,468 (5,858)	518 (5,047)	57 (1,552)	3,464 (8,747)
White perch	0.0019 (0.0074)	179 (838)	416 (2,580)	0 (0)	0 (0)	289 (2,267)	71 (738)	0 (0)	955 (3,611)
Freshwater drum	0.0008 (0.0023)	26 (203)	13 (82)	121 (772)	68 (522)	151 (621)	0 (0)	0 (0)	379 (1,142)
Smallmouth bass	0.0005 (0.0027)	0 (0)	0 (0)	30 (162)	102 (725)	0 (0)	113 (1,118)	0 (0)	245 (1,342)
Largemouth bass	0.0002 (0.0015)	0 (0)	0 (0)	0 (0)	102 (725)	0 (0)	0 (0)	0 (0)	102 (725)
Northern pike	0.0002 (0.0015)	0 (0)	0 (0)	0 (0)	102 (725)	0 (0)	0 (0)	0 (0)	102 (725)
Rock bass	0.0001 (0.0008)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	35 (369)	0 (0)	35 (369)
Bluegill	0.0000 (0.0003)	0 (0)	0 (0)	0 (0)	0 (0)	19 (166)	0 (0)	0 (0)	19 (166)
Angler hours		9,014 (3,880)	57,918 (23,397)	84,269 (35,849)	175,108 (55,656)	70,034 (19,554)	79,183 (32,406)	15,281 (11,766)	490,807 (80,723)
Angler trips		1,831 (782)	10,887 (4,314)	15,247 (6,575)	34,242 (10,812)	12,826 (3,682)	15,765 (6,474)	3,536 (2,533)	94,334 (15,532)
Angler days		1,831 (782)	10,887 (4,314)	14,913 (6,435)	34,242 (10,812)	12,700 (3,642)	15,765 (6,474)	3,470 (2,521)	93,808 (15,462)

Table 2.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats on Lake Erie, 2001.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Rainbow trout	0.000	0.002	1	2	0	0	0	0	0	3
Yellow perch	0.564	14.817	3	134	259	1,126	14,577	11,305	1,281	28,685
Walleye	0.864	22.674	377	5,116	23,426	14,239	655	83	1	43,897
Other	0.023	0.611	8	364	549	200	29	20	12	1,182
Angler hours			628	6,374	22,290	13,828	4,453	2,841	404	50,818
Angler trips			81	1,134	4,561	2,700	838	567	80	9,961
Anglers										
Resident			51	1,066	4,073	2,371	724	510	80	8,875
Nonresident			30	68	507	344	114	57	0	1,120
Charter excursions			23	227	858	520	174	117	17	1,936

Table 3.—Total catch per hour, catch per excursion, number caught, and fishing effort (angler hours, trips, and charter excursions) for charter boats on Lake St. Clair and the St. Clair River, 2001.

Species	Total catch per hour	Total catch per excursion	Month							Season
			Apr	May	Jun	Jul	Aug	Sep	Oct	
Coho salmon	0.000	0.012	0	5	0	0	0	0	0	5
Chin. salmon	0.003	0.081	0	35	0	0	0	0	0	35
Rainbow trout	0.000	0.002	0	0	0	0	1	0	0	1
Brown trout	0.001	0.016	0	7	0	0	0	0	0	7
Yellow perch	0.551	14.776	47	216	1,028	1,033	1,541	1,674	859	6,398
Walleye	0.222	5.949	677	656	275	557	300	111	0	2,576
Other	0.300	8.048	36	95	605	1,125	1,192	377	55	3,485
Angler hours			1,331	1,415	1,839	2,409	2,334	1,853	423	11,603
Angler trips			203	228	304	374	358	280	73	1,820
Anglers										
Resident			195	225	296	363	314	266	73	1,732
Nonresident			16	3	8	11	44	14	0	96
Charter excursions			56	58	71	92	85	59	12	433

Table 4.—Commercial harvest from Michigan waters of Lake Erie in 2001.

	Carp	Buffalo	Channel catfish	Goldfish	Freshwater drum	Others <sup>1</sup>	Total
Harvest (lbs.)	185,495	24,393	16,328	8,281	2,935	1,909	239,341
% of total	78	10	7	3	1	1	100
Market value	\$22,259	\$10,135	\$9,796	\$2,866	\$293	\$697	\$46,048

<sup>1</sup> 'Others' category includes gizzard shad, bullhead, white bass, and quillback.

Table 5.—Walleye CPUE (number per net lift) in multi-filament gill nets during fall surveys on Michigan waters of Lake Erie.

Year Class	Total CPUE	Survey year																		
		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
1974	13.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
1975	42.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
1976	18.4	0.0	0.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
1977	171.0	3.0	0.5	0.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
1978	61.6	1.8	0.5	1.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
1979	72.4	2.3	2.0	0.5	0.5	0.3	—	—	—	—	—	—	—	—	—	—	—	—	—	
1980	92.7	5.0	5.3	2.3	0.5	0.3	0.0	0.3	—	—	—	—	—	—	—	—	—	—	—	
1981	72.3	7.8	3.8	2.8	2.3	0.5	0.3	0.0	—	—	—	—	—	—	—	—	—	—	—	
1982	306.2	91.8	95.8	44.3	28.5	5.3	7.5	3.5	0.5	—	—	—	—	—	—	—	—	—	—	
1983	34.6	4.5	12.0	4.0	5.0	3.5	1.8	1.8	2.0	—	—	—	—	—	—	—	—	—	—	
1984	147.7	—	69.8	34.3	20.5	3.5	8.0	8.3	2.0	0.5	0.3	0.5	—	—	—	—	—	—	—	
1985	177.2	—	—	98.0	42.5	9.3	14.3	8.5	1.5	1.3	0.8	1.0	—	—	—	—	—	—	—	
1986	297.5	—	—	—	96.8	30.3	90.3	43.5	19.5	11.0	3.8	2.0	0.3	—	—	—	—	—	—	
1987	127.8	—	—	—	—	4.5	53.8	26.8	20.0	13.8	2.5	3.8	1.0	0.5	0.8	—	0.3	—	—	
1988	125.0	—	—	—	—	—	61.5	35.8	9.3	7.3	4.5	4.5	0.5	0.8	0.8	—	—	—	—	
1989	52.6	—	—	—	—	—	—	16.0	17.0	10.0	2.8	3.3	1.3	0.8	0.8	0.3	0.3	—	—	
1990	136.4	—	—	—	—	—	—	—	54.5	48.0	13.0	16.5	1.5	1.3	1.3	0.0	0.3	—	—	
1991	194.3	—	—	—	—	—	—	—	—	63.0	47.3	61.5	11.3	6.8	2.8	1.3	0.3	—	—	
1992	16.7	—	—	—	—	—	—	—	—	—	2.0	7.3	2.0	0.3	1.5	2.3	1.0	0.3	—	
1993	169.2	—	—	—	—	—	—	—	—	—	—	73.3	71.0	11.8	8.0	3.3	1.5	0.3	0.5	
1994	130.5	—	—	—	—	—	—	—	—	—	—	—	63.3	43.0	14.0	4.8	2.8	1.8	0.8	
1995	8.0	—	—	—	—	—	—	—	—	—	—	—	—	3.3	1.3	0.8	1.0	0.8	0.8	
1996	175.4	—	—	—	—	—	—	—	—	—	—	—	—	—	37.5	84.3	30.5	13.3	9.8	
1997	124.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	54.3	34.3	20.3	15.3	
1998	70.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26.0	29.5	14.8	
1999	130.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	57.0	73.3	
2000	6.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.5	
Total		116.2	190.2	187.8	196.6	57.5	237.5	144.5	126.3	154.9	77.0	173.7	152.2	68.6	68.8	151.4	98.3	123.3	121.8	
Net lifts		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	



